

NOTES

THE Committee for the National Monument to Alexander von Humboldt publishes a report on the proposal to erect in front of Berlin University buildings statues to the brothers Wilhelm and Alexander von Humboldt. On the occasion of the 100th anniversary of the birth of the latter in the year 1869, a number of Berlin notabilities met for the purpose of organising a public memorial to the great scientific explorer at the expense of the German nation. A committee was chosen, whose labours were crowned with such success that a sum of nearly 100,000 marks was soon obtained. At the request of the committee to allow the statue to be erected in the University grounds, the Senate stated that they could only give their consent if at the same time a similar statue were erected to Wilhelm von Humboldt, the statesman who, as councillor to King Frederick William III., had an essential hand in the erection of the University. It was then resolved to erect the statues one on each side of the gate which separates the front garden of the University from the Opernplatz. On each side of the middle gate a niche will be made, and in these will the statues of the illustrious brothers be placed. As there was some difficulty as to the means for erecting the statue of W. von Humboldt, the Emperor was appealed to, and he has promised to endeavour to get it erected at the cost of the national purse. Thus then Berlin will soon possess two new statues in her Unter den Linden, and the German people will have paid a debt of gratitude long due to two of her noblest sons.

THE well-known physicist, Wilhelm Edward Weber, the last of what was known as the "Göttinger Sieben," celebrated on August 26, in Göttingen, his Doctor's Jubilee. Weber was born October 24, 1804, at Wittenberg, a brother of the physiologist and anatomist, Ernst H. Weber, with whom, in 1825, he laid, in the wave-theory, the basis of the new Optics and Acoustics. In 1831 he became Professor at Göttingen, and in 1837 resigned his chair; with him also protested against the abrogation of the Constitution Professors Albrecht, Dahlmann, Ewald, Gervinus, Jakob and Wilhelm Grimm, who, of course, also with him resigned their chairs, and with him went into exile. In the year 1849 Weber was restored to his chair, and has just celebrated his Doctor's Jubilee in full vigour of mind, and active as ever in scientific and literary work.

MR. J. COCKBURN, of Darn Hall, Eddleston, N.B., on the night of the 23rd, when taking a photograph of some of the stars, saw the brightest meteor that he has seen for two years. The time was 9.51 P.M.; it lasted about $1\frac{1}{2}$ seconds, and left a train which was visible fully half a second after the disappearance of the meteor. The colour was a darkish green, and the train was orange. Its course was from above α Lyrae across the Galaxy towards Aquila. It disappeared before it had quite crossed the Milky Way. Dr. J. E. Taylor, of Ipswich, writes that on the night of the 24th a meteor fell there about 6.30, directly over the planet Saturn. The path described by the meteor was about one-sixth of the sky. Dr. Taylor never saw one so brilliant. The meteor seemed to burst before reaching the horizon, as if it had exploded. For nearly ten minutes the line of white cloud the meteor left behind it was visible, until at length it broke up into patches and drifted away. This same meteor was seen over a wide extent of country—at Broadstairs, West Deeping, in Lincolnshire, Ipswich, Walton-on-the-Naze, Somersetshire, between Dunkirk and Calais, and at Paris. *Galignani* says:—"A meteor of extraordinary brilliancy was seen in Paris during the twilight yesterday evening at 6.40. In the northern heavens, at an angle of 30° above the horizon, a fiery globe, about the size of a cricket ball, seemed to emerge from the clear sky descending slowly towards the earth, emitting showers of sparks and a scintillating train in its flight. It fell almost perpen-

dicularly, and grew elongated in falling. It had hardly flashed into sight when it disappeared behind the houses, where it must have burst, for the whole northern sky was illuminated with two successive blazes of fire like lightning, by which the surrounding clouds were tinged as if with gold. The effect was extremely beautiful."

THE obstruction at the entrance to New York Harbour known as Hell Gate was successfully removed by an explosion of dynamite on Sunday afternoon without any of the disasters that many people anticipated. The mass to be removed was about 70,000 cubic yards. The number of borings was 3,500; the number of galvanic batteries 200, placed in an explosion-proof chamber at a distance of 200 feet from Hell Gate. The diameter of the borings was uniformly 3 inches, and the depth varied according to circumstances, from 3 to 11 feet. Fifty thousand pounds of dynamite were used. The shock was not perceptible, not even glass being broken. A vast volume of water and smoke was driven about fifty feet into the air. All the charges were exploded, and the rock is stated to have been thoroughly removed. The explosion was heard at a distance of ten miles, and a tremor like a slight earthquake was heard in New York City and the localities contiguous to Hell Gate. The work has been in progress for seven years.

THE *Golos* of Sept. 17 gives some late information received from Omsk, as to the Thibetan Expedition of M. Prejevalsky, and as to his latest arrangements relative to the route to be followed. From Omsk, which he left July 9 with MM. Povalov-Shveikofsky and Ecklon, he was to proceed through Semipalatinsk and Sergiopol to Kooldsha; thence, crossing the Tian Shan, he would go to the Lob-nor, where he is to stay during the autumn, until December. For the winter-months the expedition will return to Kooldsha. Starting thence in the spring, they propose to go through Karatar to Hlassa in Thibet. To the exploration of different parts of that country they propose to devote two years, after which they will descend the valley of the Brahmaputra. The expedition is well provided with means, having at its disposal 25,000 roubles. Their baggage, when it arrived at Omsk, weighed not less than 2,500 kilogrammes. As on his last journey, M. Prejevalsky has provided himself with a good supply of the means for hunting and self-defence, carrying 10,000 cartridges for rifles, 65 kilogrammes of gunpowder, and 250 kilogrammes of shot. Plenty of small steel instruments (knives, scissors, razors), looking-glasses, some silver tea-sets, &c., for commerce and presents, are said to be well chosen by M. Prejevalsky to gratify the taste of the Mongols.

THE splendid orang-utang in the Berlin Aquarium died last week of consumption. Its friend and playfellow, the chimpanzee, died the next day of consumption and grief. The young gorilla, the one living specimen ever brought to Europe, which we referred to some months ago, is still alive, but ailing. Hamburg not long ago offered 100,000 marks for the gorilla; it is feared that he will soon be sold for less.

AN organ for High Schools under the title *Alma Mater*, will be published in Vienna on October 1. It will appear weekly, will be exclusively devoted to the interests of the High Schools, and will advocate reforms in all academical matters. Many eminent professors in Germany and Austria have promised to become contributors.

THE City authorities of Munich have consented that the meeting for 1877 of the German Naturalists will be held in that town, and have also declared their intention of meeting all the costs of reception. An Ultramontane majority in the town-council of Aix-la-Chapelle, declared that the naturalists should not meet in that town.

THE fifth meeting of Russian Naturalists, which takes place this year at Warsaw, was opened on the 12th inst. It was well attended, the number of members having been on the opening day nearly 250, which number increased daily afterwards.

DR. THOMAS LAYCOCK, Professor of the Practice of Physic and Clinical Medicine in the University of Edinburgh, died at Edinburgh, on Thursday last.

THE number of visitors to the Loan Collection of Scientific apparatus during the week ending September 23 was as follows:—Monday, 3,082; Tuesday, 2,622; Wednesday, 375; Thursday, 345; Friday, 296; Saturday, 3,991. Total, 10,711.

THE Congress on Silk-culture, at its Milan Session, declared that its next bi-annual meeting should take place at Paris on the occasion of the general exhibition.

THE Champ de Mars has been quite closed for the works of the 1878 exhibition. A number of deputies, senators, &c., have been appointed by a recent decree members of the Administrative Commission. All the expenses of building, &c., will be supported by the public exchequer. The great undertaking is exclusively in the hands of the public administration.

DR. PETERMANN has received a telegram, dated from Hammerfest, September 19, announcing the safe arrival at that port, from the Jenisei River, of Prof. Nordenskjöld's trading expedition which, it will be remembered, started from Tromsø as late as June 25, on its voyage through the Arctic Ocean of Siberia to the mouth of the Jenisei. The voyage out to the latter and back was performed in about five weeks only, during sixteen days of which the expedition stayed at the Jenisei. The expedition found the sea perfectly navigable and free from ice; thus the practicability of a trade route from Europe through the Arctic Ocean to Siberia seems to have again been demonstrated.

THE British Association grant for the investigation of the constitution of the double compounds of nickel and cobalt was given to Mr. John M. Thomson, not to Mr. W. N. Hartley, as stated in our last week's list.

THE French Franklin Society, established for the creation of popular libraries, received a silver-gilt medal from the Brussels Exhibition for services rendered to public instruction.

THE direction of primary instruction in Paris is preparing plans for the establishment in that city of a normal school of gymnastics.

M. TISSERAND, Inspector-General of Agriculture in France, has been appointed director of the Agronomical Institute. The lectures will be given at the Conservatoire des Arts et Métiers, and the authority of General Morin will be paramount over the new institution. A notice to the public has been published in the official paper reminding them that the course of lectures will be opened on November 15. Pupils are obliged to present a diploma of *Baccalaureat-ès-Sciences*, or to pass an examination to prove that they are conversant with the subjects of the said examination. Tuition fees are 300 francs a year, but free pupils are admitted at a reduced fee of 25 francs. Foreigners are admitted without any limitation.

THE University of Heidelberg as well as medical science and practice, has recently sustained a great loss in the death of Dr. Simon, for fifty-three years a professor of surgery therein and a skilful operator.

THE ordinary professor of mathematics in Vienna University, Dr. Ludwig Boltzmann, has been appointed professor of physics and director of the Physical Institute in the University of Graz.

DR. TÖPLER has been appointed Professor of Experimental Physics in the Polytechnic School of Dresden.

MR. WILLIAM MATHEWS, jun., M.A., F.G.S., of Birmingham, has, in consequence of ill health, resigned the office of local Secretary to the Ray and Palæontographical Societies, which he has held for upwards of twenty years, and Mr. W. R. Hughes, the Treasurer of the Borough, succeeds him.

SESSION 1876-7 of the Birmingham and Midland Institute will be opened on Oct. 5 by an address by Mr. Joshua Morley. Among the lectures to be given during the Session are the following:—Oct. 13, Recent Explorations in Africa, by Lieut. Cameron, D.C.L.; Oct. 16, Antarctic Discovery, and its Connection with the Transit of Venus, 1882, by Capt. Davis, R.N.; Oct. 23, The Early Forms of Animal Life, by Prof. W. C. Williamson, F.R.S.; Oct. 30, The Early Forms of Vegetable Life, by Prof. W. C. Williamson, F.R.S.; Nov. 20, Spectrum Analysis applied to the Heavenly Bodies, by Wm. Huggins, F.R.S.; Dec. 11, The Ancient Inhabitants of the Caves of Derbyshire, by Prof. Boyd Dawkins, F.R.S.; Jan. 22 and 29, 1877, Rots and Ferments, our Unseen Enemies, by E. Ray Lankester, F.R.S.; March 12, The General Results of the *Challenger* Expedition, by Prof. Sir C. Wyville Thomson, F.R.S.; March 19 and 26, Radiation and Radiometers, by Prof. W. F. Barrett, F.R.S.E.

EARTHQUAKES were felt on the night of September 12-13, at Salonica, and in South Italy, at Reggio. Two motions were observed in the last city, the first one being the most notable, both having taken place on the 13th, between 12 and 1 o'clock, local time. Another earthquake was felt at Salonica, on the 14th, at 5 o'clock in the morning. The Reggio commotions were propagated to Messina and vicinity. They produced quite a sensation, although not destructive.

In the *Bulletin Mensuel* of the Observatory at Montsouris for July is given an interesting comparison between the amount of atmospheric ozone observed by Schönbein's test-papers and that ascertained by the more exact method employed for some time at the Observatory, with the result that, setting aside all anomalies due to excessive moisture and excessive drought, and to the velocity of the wind, there is a pretty fair agreement between the amounts obtained by the two methods. It must, however, be added that while this result is in a sense gratifying, the observation of this important element by the ordinary method of test-papers is far from being satisfactory.

As the U.S. Congress has made the necessary appropriations to meet the expense of various Government geological and geographical surveys of the Territories, the parties have taken the field, and hope to accomplish a good deal, although the delay on the part of Congress in supplying the means will lessen the period of active work materially. Dr. Hayden's expedition will be divided into four parties. The first will be in charge of Mr. A. D. Wilson, with Dr. Endlich as geologist and Mr. Atkinson as topographer, and will complete the exploration of the small portion of Colorado lying near the Utah line, and then move northward on the west side of the Rocky Mountains. Mr. Henry Gannett will have charge of the second division, with Dr. Peale as geologist, and James Stevenson as executive officer. This division will revisit the region in which a portion of Prof. Hayden's party had an encounter with the Indians and was driven off, last year, with the loss of their implements. Mr. G. R. Bechler will be in charge of the third division, with the necessary assistants. He will pass westward through the Middle Park, working along the north-western part of Colorado. The fourth division will be in charge of Dr. Elliott Coues, with an assistant, and will be especially devoted to zoological work, visiting such portions of Dr. Hayden's region of investigation as have not been examined in previous years. Dr. Hayden himself will visit all the parties in the course of the summer and autumn, and co-ordinate their work.

SOME curious experiments on the expansion of liquids to lamellae, have recently been described by M. Cintolesi in the *Rendiconti Reale Istituto Lombardo*. He considers that the phenomenon is always accompanied with a development of gaseous masses; further, that the spreading out of liquids on each other is caused by the vapours of the substances, whose molecules moving in every direction force the liquid molecules out from each other horizontally, and, where the resistance of the liquid is not strong enough, rupture the film.

In his thermo-chemical researches on gold and its compounds M. Julius Thomsen has observed that gold separated out from different solutions and by dissimilar reducing agents presents allotropic differences, three of which he has studied:—1. Reduced from chloride solution with sulphurous acid, gold forms a balled mass. 2. Reduced similarly from the bromide solution, it forms a very fine dark powder, which retains its powder form even after drying. 3. Reduced from the chloruret, bromuret, or ioduret, with sulphurous acid or hydrogen acid, it forms a very fine powder with metallic brilliancy and yellow colour. These modifications are also distinguished by unequal heat-energy in the several reactions.

FROM careful measurements during 1871 and 1872, it appeared that the quantity of water annually flowing past in the Elbe, at the boundary between Saxony and Bohemia, was about 6,179 million cubic metres. M. Breitenlohner, considering the quantity along with analyses he made of Elbe water in 1866, has calculated the amount of solid matter carried away by the Elbe out of Bohemia every year. His estimate is, for suspended matters carried off, 547.14 million kilogrammes, dissolved matters, 622.68 million kilogrammes (of which 977.7 million were fixed, and 191.12 million volatile), giving a total of 1169.82 million kilogrammes of solid substances carried off. The numbers are also interesting which indicate the proportions of substances important to agriculture that are thus removed from Bohemia. In the 6 milliards of cubic metres of Elbe water, there are partly, suspended, partly dissolved, 140.38 million kilogrammes lime, 28.13 million kilogrammes magnesia, 54.52 million kilogrammes potash, 39.6 million kilogrammes soda, 25.32 million kilogrammes chloride of sodium, 45.69 million kilogrammes sulphuric acid, and 1.5 million kilogrammes phosphoric acid. The Elbe has a basin of about 880 square miles in Bohemia.

AN essay on the Wines and Wine Industry of Australia, by Rev. Dr. J. I. Bleasdale (Melbourne: Baillière), contains a great deal of information on a subject of much industrial and economic interest.

PART I. of Vol. III. of the *Transactions* of the Connecticut Academy of Arts and Sciences is a thick one, and is profusely illustrated with well-executed plates. The papers are:—"Reports on the Dredgings in the Region of St. George's Banks in 1872," by Messrs. L. J. Smith and O. Harger; "Descriptions of New and Rare Species of Hydroids from the New England Coast," by Mr. S. F. Clark; "On the Chondrodite from the Tilly-Foster Iron-Mine, Brewster, N.Y.," by Prof. E. S. Dana; "On the Transcendental Curves $\sin y \sin my = a \sin x \sin nx + 6$," by Professors H. A. Newton and A. W. Phillips; "On the Equilibrium of Heterogeneous Substances," by Prof. J. Willard Gibbs.

WE have received Part 4 of the *Transactions* of the Glasgow Society of Field Naturalists, containing an account of the proceedings for 1875-6. The part contains many valuable papers in natural history, the results of original observations, and we regret that want of space prevents us referring to them in detail.

THERE are several papers of considerable value in the last-issued part of the *Transactions* (vol. iii. No. 2) of the Academy of Science of St. Louis, and we regret that our space will admit

of our giving only the titles:—"Iron Manufacture in Missouri; a General Review of the Metallurgical Districts and their Resources," by Dr. A. Schmidt; "Remarks on Canker-worms, and Description of a New Genus of Phalænidæ," by Prof. C. V. Riley, who also contributes "Notes on the Natural History of the Grape Phylloxera (*P. vastatrix*)," and "Notes on the Yucca Borer (*Megathymus yuccæ*, Walk.);" "On a New Form of Lecture Galvanometer," by Prof. Nipher; Dr. G. Engelmann contributes "Notes on Agave (with photographic illustrations)," and "About the Oaks of the United States;" "The Rocky Mountain Locusts and the Season of 1875," by Mr. G. C. Broadhead, who also contributes papers on "The Meteor of Dec. 27, 1875," and on the "Age of our Porphyries;" Mr. A. J. Conant has a paper on the "Archæology of Missouri." The latter part of the number is occupied with the Journal of Proceedings.

In the *Penn Monthly*, a Philadelphia publication, for May and June are two interesting articles by Mr. C. E. Dutton containing "Critical Observations on Theories of the Earth's Physical Revolution."

THE additions to the Zoological Society's Gardens during the past week include two Bonnet Monkeys (*Macacus radiatus*) from India, presented by Mr. Chas. E. Green and Mr. R. K. Meaden; a Macaque Monkey (*Macacus cynomolgus*) from India, presented by Capt. J. C. A. Lewis; a Striped Hyæna (*Hyæna striata*) from Algeria, presented by Mr. Thos. Barber; an Arabian Gazelle (*Gazella arabica*) from Arabia, presented by Mr. F. de Havilland Hall; a Grey Ichneumon (*Herpestes griseus*) from India, presented by Mr. Geo. J. Hendry; a Common Boa (*Boa constrictor*) from South America, presented by Mr. F. B. Bloxham; a Red and Yellow Maccaw (*Ara chloroptera*) from South America, deposited; a Hog Deer (*Cervus porcinus*), born in the Gardens.

SCIENTIFIC SERIALS

American Journal of Science and Arts, September.—In a second paper on the gases contained in meteorites, Mr. Wright first describes those of the Kold Bokkeveld stony meteorite, one of a distinct class containing a good deal of amorphous carbon, a bituminous substance, and very little metallic iron. The volume of the gases obtained was much greater, but the gaseous mixture was like that of ordinary stony meteorites, except in the very small quantity of hydrogen present. A comparative table is given of the gases of seven iron and six stony meteorites. From experiments on the manner of occurrence of carbon dioxide, the author infers that while some of the gas may be condensed on the fine particles of the iron, a large portion of it and of the water, carbonic oxide, and other gases, is mechanically imprisoned in the stony substance of the meteorite. The idea is favoured of comets consisting of meteoric masses with the gases expanding under action of solar rays. Every cubic mile of a substance like the Kold Bokkeveld meteorite would give thirty cubic miles of gas at the pressure of our atmosphere, and in space this would expand enormously before it would cease to transmit electric discharges or be visible by reflected sunlight. These views are confirmed by spectroscopic observations of meteoric gases.—Mr. Storer, questioning Carius' statement that Schoenbein's iodo-starch test for nitrates used with zinc as reducing agent, is not a specially delicate one, finds that the fatal defect of the test, as hitherto applied, lies in the fact that mere water containing no nitrates or nitrites, on being treated with zinc or cadmium, as if to test for a nitrate, will react on iodo-starch just as if a trace of some nitrate were present. This coloration is due to peroxide of hydrogen formed in the water by action of the metal. Mr. Storer also finds that no peroxide of hydrogen is formed when water slightly acidulated with sulphuric acid is boiled on metallic cadmium; and as the reduction of nitrates and nitrites occurs readily in such solutions, the iodo-starch test can be thus applied for detection of nitrates with great certainty.—Mr. J. Lawrence Smith gives an account of a new meteoric stone which fell in 1865 in Wisconsin, and which is identical with the Meno-meteorite which fell in 1861.—Mr. Brooks gives a classified list of